HOUSE OF COMMONS

First Report from the

HOUSE OF COMMONS (SERVICES) COMMITTEE

Session 1984–85

INFORMATION TECHNOLOGY: MEMBERS' REQUIREMENTS

Volume I

REPORT

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The Select Committee on House of Commons (Services) was appointed on 30 March 1983 by Standing Order No. 103, viz—

103.—(1) There shall be a Select Committee to advise Mr Speaker on the control of the accommodation and services in that part of the Palace of Westminster and its precincts occupied by or on behalf of the House of Commons, and to report therein to this House.

(2) The Committee shall consist of Nineteen Members.

(3) The quorum of the Committee shall be five.

(4) The Committee shall have power to send for persons, papers and records, to sit notwithstanding any adjournment of the House, and to report from time to time.

(5) The Committee shall have power to invite any specially qualified person, whom it may select, to attend any of its meetings in an advisory capacity on any architectural or related matters.

(6) The Committee shall have power to appoint Sub-Committees and to refer to such Sub-Committees any of the matters referred to the Committee.

(7) The quorum of every such Sub-Committee shall be two.

(8) Every such Sub-Committee shall have power to send for persons, papers and records, to sit notwithstanding any adjournment of the House and to report to the Committee from time to time.

(9) The Committee shall have power to report from time to time the minutes of evidence taken before Sub-Committees.

(10) Any Sub-Committee which may be appointed to deal with the organisation of, and the provision of services in, the Library shall have the assistance of the Librarian.

(11) Any Sub-Committee which may be appointed to consider the organisation of and services in the Refreshment Department shall have power to appoint specialist advisers for the purpose of particular inquiries, either to supply information which is not readily available or to elucidate matters of complexity within the Sub-Committee's order of reference.

(12) Any Sub-Committee on Computers that may be appointed shall have power to join with any Sub-Committee thereon that may be appointed by the Select Committee of the House of Lords on House of Lords Offices, to appoint specialist advisers either to supply information which is not readily available or to elucidate matters of complexity relating to the matter referred to it, and to adjourn from place to place within the United Kingdom.

The cost of printing and publishing this Volume is estimated by Her Majesty's Stationery Office at £2,700.

(13) Unless the House otherwise orders, each Member nominated to the Committee shall continue to be a member of it for the remainder of this Parliament.

The Committee was nominated on 7 July 1983 of the following Members:—

Mr A J Beith
Mr John Biffen
Mr Graham Bright
Mr Sydney Chapman
Mr John Cope
Mr Patrick Cormack
Mr Lawrence Cunliffe
Mr Don Dixon
Mr Walter Harrison
Sir Paul Hawkins
Mr Charles Irving
Mr Ian Lloyd
Mr John McWilliam
Mr Fergus Montgomery
Mr Robert Rhodes James
Mr Colin Shepherd
Mr John Silkin
Mr James Tinn
Mr Kenneth Warren

Notwithstanding the Order of the House of 7 July 1983 relating to nomination of Members of the Select Committee on House of Commons (Services) the following changes were made for the remainder of the Parliament:

Thursday 8 *December* 1983

Discharged	*Added*
Mr Don Dixon	Mr Norman Hogg

Monday 12 *December* 1983

Discharged	*Added*
Mr Lawrence Cunliffe	Mr Andrew Faulds
Mr Walter Harrison	Mr Peter Shore

Tuesday 27 *March* 1984

Standing Order No. 103 was amended in paragraph (2), by leaving out "Nineteen" and inserting "Twenty". Mr Carol Mather was added to the Committee.

Tuesday 4 *December* 1984

Discharged	*Added*
Mr Graham Bright	Mr Winston Churchill

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FIRST REPORT

The Select Committee appointed to advise Mr Speaker on the control of the accommodation and services in that part of the Palace of Westminster and its precincts occupied by or on behalf of the House of Commons and to report thereon to this House, has made progress in the matter referred to it and has agreed to the following Report:

INFORMATION TECHNOLOGY: MEMBERS' REQUIREMENTS

INTRODUCTION

1. During the last Parliament the Economist Intelligence Unit was appointed under the aegis of the Department of Industry to carry out a survey of Members' information technology needs. This was to serve as the basis for further discussion of what information technology systems, if any, were required for Members of Parliament. The material for the survey was gathered at the end of the last Parliament.

2. At the start of the present Parliament the Computer Sub-Committee embarked on a broadly based enquiry into Information Technology: Members' Requirements using the study by the consultants as a starting point. We would like to thank the EIU consultants for their detailed survey and regret that their work was interrupted by the dissolution of the House before the last election.

3. As the enquiry continued three important changes in the House became apparent as being likely to influence the eventual findings. The first was the decision to instal a new telephone exchange based on a digital system via which messages other than speech data could be transferred between terminals. The second was the proposed renewal of the annunciator system which could provide the basis for a similar double use. These developments were also significant in that they blurred the distinction between computers, telephones and annunciators and allowed the Sub-Committee to look at information systems as an integrated whole and examine the value of merging in part or in whole these separate information systems as well as the possible addition of new sources. The third was the extension of Members' allowances to allow among other things the purchase of electronic office equipment. Many Members have used this opportunity to purchase microcomputers.

4. When considering this Report the Committee recalled the wish expressed by many Members that more and better accommodation be made available for Members in the precincts of the main building. In particular it kept in mind the recommendations of its Third Report in 1983–84 "The New Building: The Design Brief".

5. In addition to receiving oral and written evidence, the Sub-Committee received a report on the use of the present telephone system for communication other than speech using modems from a working party of officials, chaired by Mr John McWilliam, MP. The working party report is printed as an Annex to the Report.

6. The Sub-Committee took oral evidence from the witnesses listed on page XXVII as well as receiving much written material, some of which is printed in the Appendix to the Report. Various outside organisations showed the Sub-Committee their office systems. We are particularly grateful to the following institutions, which were taking part in the Office Automation Pilot Projects sponsored by the Department of Trade and Industry: the Greater London Council, Strathclyde Regional Council, the Cabinet Office and the Export Credits Guarantee Department. We would also like to thank BBC Breakfast Television and the Canadian Broadcasting Corporation which submitted videos describing their systems and Datapoint (UK) Ltd which, with Ministry of Defence Officials, arranged a visit to the MoD office system. Thanks are also due to British Telecom for demonstrating their MERLIN equipment and to Mr Anthony Hodson of ICL for advice on the use of microcomputers in the House. The Committee is very grateful to Mr Alan Knight for his useful work as a specialist adviser and to Mr Richard Morgan, the Computer Development Officer, Mrs Gina Smith the Assistant Computer Development Officer, and Mrs Jane Wainwright of the Library who also acted as specialist advisers to the Sub-Committee.

7. Following the appropriate amendment of the Standing Orders the Sub-Committee visited three main congressional centres in Washington where computers have been in use since the 1960s: the Library of Congress, the Senate and the House of Representatives. The development of computing facilities in each organisation up to now has been on separate lines, chiefly for constitutional reasons, although the mainframe computers are joined in a local area network to provide mutual support and access. In addition, the Sub-Committee visited the relatively new Congressional Budget Office which has no mainframe computer of its own, but instead relies on microcomputers and terminals which access the mainframe computers in the other congressional organisations using a coaxial cable system installed recently by the House of Representatives. This system also transmits closed circuit television and telephone services.

8. The Sub-Committee visited the Canadian Broadcasting Corporation in Montreal, where it saw the teletext project. In Ottawa, the Sub-Committee saw the new OASIS project, which will result in the Canadian House of Commons being covered by a local area network based on broadband (and some fibre-optic) cabling. This network uses standard software and will provide video and data services to all members' offices. The Canadian Hansard and the House of Commons Television Services were also inspected. The Parliamentary Library, which is independent of both Houses in Ottawa, showed the Sub-Committee its Telidon based service called CANTEL, which provides details of the progress of legislation and its computerised catalogue.

9. We are very grateful to all the members of those organisations which helped to make the visit such a success. A full account of what the Sub-Committee saw in North America is printed as an Appendix to the Report; in our view the services provided by the Canadian OASIS system appear to be very close to what would be suitable for Members in this House. Throughout this Report the recommendations, which are summarised below, will reflect this.

10. The evidence received by the Sub-Committee and what it saw in North America of the advantages of the new technology indicate that Members could

attain a level of service to the House and their constituents using data transmission and processing equipment that would be otherwise impossible without a wholly unrealistic increase in their staff. Indeed, as institutions outside the House are busily embracing this technology as a business standard, the House will need to keep up with such advances if it is to play its full political role. **The growth of statistical data available and the mass of other information with which all Members must deal makes the speedy introduction of an effective information technology system of vital importance.**

11. The Report is in two parts. Part One describes the options for designing the system containing a chapter which outlines some of the tasks information technology can perform and a chapter describing the possible lay-out of the system. Part Two deals with building the system and putting it into operation, including chapters on the phases for introducing the system, the likely effect on staff requirements and how the system would be funded with an estimate of its cost.

SUMMARY OF RECOMMENDATIONS AND CONCLUSIONS

12. (i) The following applications should be provided using the new equipment from the start, based on "off the shelf" software:

(a) Word processing facilities;	(paragraphs 16 to 27)
(b) Correspondence handling;	(paragraph 25)
(c) Diary—personal; House business; party business	(paragraph 25)
(d) An electronic mail system;	(paragraphs 28 to 33)
(e) Teletext and other databases (including Ceefax & Oracle)	(paragraphs 34 to 44)
(f) Access to Prestel	(paragraphs 41 and 42)
(g) Access to POLIS (Parliamentary On-Line Information Service)	(paragraph 43)
(h) Access to commercial databases, if individual Members wish;	(paragraph 44)

(ii) A pilot project based on existing wiring should be set up in order to provide information about how Members would best make use of the new system and the likely cost of running the system. We suggest that the machines for use with the project might be rented so that the maximum amount of flexibility would be obtained. This would also have the effect of providing a manageable limit to the number of persons taking part in the pilot project. (Paragraph 67 and passim.)

(iii) As part of the main project, a local area network (LAN) able to cope with the growth in demand for information services should be laid based on coaxial cabling with Cable TV (CATV) type junction points which should be placed in all Members' and other relevant offices. (Paragraphs 45 to 60.)

(iv) The House might provide equipment directly, or the present system by which Members buy electronic office equipment from their office allowance might be extended to allow them to purchase recommended microcomputer equipment (with suitable interfaces) which can be linked to the LAN which forms part of the main project. (Paragraph 80.)

(v) A technical working party should be appointed which will examine tenders for the contracts arising from the installation of the system and report to the Computer Sub-Committee on the progress and results of the pilot project. The working party will also report on the progress of the main project, especially the new network. (Paragraph 73.)

(vi) Arrangements should be made about the management of the new system, including the day to day supervision of its installation of the system and its introduction into service. The contract could be put out for tender for a management contract or new staff could be taken on temporarily perhaps by way of secondment. (Paragraphs 74 to 76.)

13. This project could not be implemented overnight. It would be necessary to progress in stages. The time scale within which the House should introduce the proposed system is as follows (see paragraphs 64 to 71):

Phase 1 Agreement on: 15 months

(i) The provision of funds.

(ii) The design of the system:

Issue of Operational Requirements for cabling for each Parliamentary Building and also for central hardware and software.

(iii) A management team.

Any recruitment or secondment of extra staff required to set up the system.

At the earliest possible stage the pilot project involving a small number of Members should be started, which would be developed in parallel to the main systems. It would be under constant evaluation providing information at all phases of the main scheme for the guidance of the House.

Phase 2 Installation of the relevant types of cabling in first Parliamentary out-building. 18 months

Training of Members and Members' staff in first building.

Phase 3 As Phase 2 for remaining Parliamentary outbuildings. 18 months

Phase 4 As Phase 3 for the Palace. 21 months

Addition of annunciator system to cable network.

A diagram of the proposed time-table for implementing the system is at Annex 1. It will be seen that the planning of later phases would to some extent overlap previous phases and so the time required for the system as recommended to be installed and working should be four years.

The working party should report to the Computer Sub-Committee on any further phases of development that might be required.

14. SUMMARY OF ESTIMATED COSTS

The cost of the pilot project will be	£223,000
The cost of the main project will be	£1,535,000
Total Cost of the projects	£1,758,000
The cost of terminals for Members will be about	£3,250,000
Total Cost	£5,008,000

NB: The above figures do not include those costs which cannot be accurately gauged at this stage.

PART ONE: DESIGNING THE SYSTEM

CHAPTER 1: Relevant Applications

15. We outline below those applications which the new equipment should aim to provide from the start, but we believe that experience will reveal further demands which the system will be able to serve. Any such expansion in applications should be catered for at all stages of the project.

WORD PROCESSING

16. Word processing has had a significant impact on the organisation and methods of office work in the past decade. A wide choice of equipment is readily available offering a range of facilities at varying costs. The EIU study examined "the patterns and volume of work carried out by Members and their support staff in terms of correspondence and text generation."[1] They found that: "Members do not typically redraft long documents a number of times, but they do send out reasonable volumes of text, and there is certainly a need to be able to store and retrieve information more effectively than is presently possible. Word processing would support them in this direction, and give them and their support staff more time to pursue constituency business and other matters. What is therefore needed as a starting point is good word processing facilities with effective information storage and retrieval capabilities. It is relatively easy to see the benefits that word processing could bring: rapid response to constituency enquiries, easy redrafting for small but important textual changes, effective cross indexing systems, efficient information storage and retrieval, and access to wire services and other information systems."[2]

17. The Sub-Committee saw the effect of extensive word-processing facilities on working practices during its visits to the Greater London Council and Strathclyde Regional Council office automation projects where word processors were generally welcomed by staff as a useful addition to their equipment. Word processors have been in use in the House Departments for several years and have become an essential office machine for dealing with correspondence and drafting reports.

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[1] Evidence, p10, chapter 3.1 EIU Survey.

[2] Evidence, p31, chapter 7.8 EIU Survey.

18. In Washington, the Sub-Committee spoke to Mr John Swearingen, the Director of Technical Services in the Senate. He described a test of office equipment that had been mounted in 1982–83 which aimed to provide 25 to 45 work-stations for each Senator's office, according to the size of his constituency. It was estimated that the chief function of the work-stations would be as word processors used to write and address bulk letters from Senators to their constituents. The test was successful and staff adapted quickly.

19. The Sub-Committee saw one of the test installations in Senator Bradley's office. He had 45 staff in Washington with 22 work-stations and a further 20 staff in his constituency of New Jersey with 2 work-stations. His staff received 10,000 letters a week, all of which required a reply. The cost of installing the work stations in every Senator's office would be between $10 million and $15 million, which would be offset in three years by savings from the present system of dealing with correspondence.

20. The House of Representatives provides word processing on its approved list of equipment for Members. Representatives as well as Senators find that dealing with a large amount of mail is a major job. Without word processors neither Senators nor Representatives could cope with the present level of work created by the correspondence they receive.

21. In the House of Commons in Ottawa word processors have been in use since 1981. There are now 330 in service, including one for every Member who has wanted one. These are being replaced by new versions which can communicate through the OASIS network. Only 16 Members out of 282 have not taken advantage of the available word processors.

22. The Members had extensive lists of constituents' names and addresses which showed the relevant language in which to write the letter, the date of birth, the Poll number and a list of interests for each person based on previous correspondence. This allows automatic selection of constituents by geographical group, interest groups and so on. In time, Members' word processors will be linked to print facilities provided by the House.

23. The Sub-Committee was impressed with the extent that word processors were used in Washington and Ottawa. Proper account must be taken of the difference between their working practices and ours, but the evidence received from Members in the U.K. supported the impression that they would find word processing facilities in the House most useful. Mr Ashdown,[3] in common with other new Members, brought his experience of word processing with him, and was adapting it to the demands of his work in the House. Many Members have indicated that systems should be provided for individual Members: that is, they do not want their staff to share terminals and printers with other Members and staff. It is also clear that Members have different priorities in the organisation of their workload.[4] Given that some Members have their secretarial support at or near Westminster and others are supported from their constituency (and some have a combination of the two), a single simple system would not meet the requirements of all Members.

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[3] Q123.

[4] Evidence, p5, chapter 2, EIU Survey.

24. Dr Bray[5] and Mr Ashdown[6] both argued that microcomputers with word processing facilities should be provided rather than word processors. There is much to recommend in this approach. Given the limited office space at present available for Members and their staff, and the strong desire of the Committee to locate them in the Palace where possible, an important consideration is that microcomputers tend to be smaller than word processors. Although microcomputers are perhaps more complicated to learn to use and good support from suppliers would be important we feel that they would provide for a wider range of Members' needs than word-processors. The evidence taken by the Sub-Committee illustrated clearly the wide span of the expectations of Members about the potential of electronic information systems. The provision of microcomputers would allow a greater range of applications for Members and the scope for development of the use of the new technology would be broader.

25. The use to which Members would put word processing facilities would depend on their particular office arrangements and their personal priorities. The approved system should provide a combination of the following facilities:

(i) To write and amend text, incorporating "standard" paragraphs to produce letters, speeches, reports and articles possibly with a "speller" to check spelling/typing;

(ii) To allow text to be looked at and edited remotely (so that Members can check letters—after hours—typed by a secretary elsewhere);

(iii) To maintain a "correspondence in progress" system so that Members can tell what letters have been received and answered, and what further information has been sought;

(iv) To keep a correspondents' index of names and addresses, the subject and date of letters received or sent (with a file location reference) and a broad subject indication (possibly coded) which can be used to select recipients for mailing "shots" in much the same way as the present system in Ottawa;

(v) To run a diary which could include details of personal, political party or House events.

26. Most microcomputers of any appreciable size can produce text using a standard software package. The other functions listed above are less common and would probably require a system costing in the region of £2000–£5000 per work-station. Many suppliers would set up the "correspondence in progress" and "correspondents' index" systems using a database package.

27. The ability to look at and edit text remotely would require a Member to have a terminal or micro which could be linked by telephone and/or cable to another compatible device used for secretarial work. This device, probably another microcomputer, would be capable of being used for a variety of applications which would appeal to a greater or lesser number of Members. Some of these are discussed below.

ELECTRONIC MAIL

28. The use of electronic messaging systems (for sending messages via terminals to electronic mailboxes from which the recipient retrieves messages when

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[5] Q120.

[6] Q124.

he finds it convenient) is increasing. The Sub-Committee saw such systems in use at the Greater London Council and at Strathclyde Regional Council, at the US Congress and at the Canadian House of Commons. We understand that the French National Assembly has installed a system and that the Central Computer and Telecommunications Agency has commissioned a feasibility study for a system for Whitehall. British Telecom has demonstrated a system based on MERLIN equipment which the Sub-Committee also saw.

29. The uses of electronic mail would be that Members could:

(i) inspect their mail at a number of points in all of the Westminster precinct buildings;

(ii) send messages from any of the buildings to their staff, whether in London or their constituency or to various House Departments;

(iii) collect mail frequently or late at night without going to the Letter Board (a particular advantage to those without offices in the Palace);

(iv) reduce the amount of paper they receive in the form of short letters, notices of meetings, etc in the internal mail at Westminster;

(v) send and receive messages wherever (and whenever) one has access to a compatible terminal or microcomputer.

30. The EIU Report did indicate that there was little demand for messages to flow between Members, but if this were more easily done than at present we believe that demand will increase. The Congressional Research Service in Washington found that an increasing use was being made of the electronic mail system to send requests for information because of the convenience with which such messages could be sent.

31. In the view of the Committee the provision of electronic mail would not replace the need for the present message system based on the Doorkeepers who seek out Members, although the function of the message board may change and pressure might, in time, be reduced on the present telephone answering service.

32. Electronic mail could be used for messages now communicated by telephone or post. It could help overcome some of the problems caused by evening sittings and by the difficulties caused by Members not being able to spend time during office hours in their offices. House staff could also improve their services to Members if they had access to the system: short messages could be more quickly delivered by this facility than via the Letter Board or even be noted on the system as messages waiting at the letter board.

33. An electronic mail system could (as in the Canadian House of Commons and the US Congress) be based on a service bureau computer, it could be based on British Telecom Gold, or it could be based on an internal system. Any of these could be linked to either the new internal telephone system or a local area network. A study would need to be made of the most cost effective method of providing such a system. This would be most cheaply done as part of the pilot project that we describe below. The question of who should pay for the electronic mail equipment and other information technology is dealt with in paragraphs 79 to 88.

TELETEXT (AND OTHER) DATABASES

34. Teletext databases form an important part of the services that modern local area networks provide. The Sub-Committee had such facilities demonstrated to them during their visit to North America.

35. In Ottawa the following data systems are available:

— Statistics Canada (in Toronto) with graphic display;

— Statistical profiles of Ridings (ie constituencies);

— A microdatabase compiled by the brokers Richardson, Greenshields of the Toronto Stock Exchange.

The databases can be accessed from terminals in committee rooms and material collected from them can be printed centrally. The Parliamentary Library provides details of the progress of legislation on the CANTEL system, which will be made available in the OASIS system.

36. If the annunciator service were integrated into the new local area network annunciators could serve as teletext monitors. It would be possible to set monitors in public areas to the annunciator channel, while monitors in offices and in some areas with limited public access could have a channel selection device. (The position of monitors in some offices might have to be changed to make them more readily usable.) The other channels might carry a variety of services. There is no need to decide on the usage of all the channels at this early stage, although it is useful to think about some which might have a profound effect on Members' information problems. We believe that the present annunciators cost in the region of £1,000 each. If they were replaced by screens which acted as teletext monitors their price could be offset against the cost of the new service.

37. Voice and video channels could be used to carry radio and television programmes; one channel could repeat the latest news broadcasts; a few others could be allocated for broadcasting video recordings for training and of repeats of television shows of public and parliamentary interest—documentaries for instance. As domestic television sets now increasingly receive the teletext services CEEFAX and ORACLE (which can be seen on the Library set in A Room), these should be accessible from the annunciators with channel selectors. Any urgent messages, which are at present notified on the annunciator, such as that a Division was taking place, could be made to override messages on a Member's screen.

38. It would also be possible for the House to have its own databases accessible over one or more channels. Information which could well be of interest here of the sort that the Sub-Committee saw in the United States and Canada includes some of the contents of the Vote bundle and the Library's *Weekly Information Bulletin*. For example:

Today's Order Paper, and the Votes and Proceedings;
Statutory Instruments laid before the House in the last few days;
Select Committees: membership and enquiry topics.

The information of interest which is amenable to this technique is varied and could, for example include:

A list of Library background papers;
The Strangers' cafeteria menu for that day;
Details of which banqueting rooms were available;
Information about available days for Members to show parties around the House.

39. It should be said, however that the teletext technique has its limitations. Essentially it provides a series of lists which can be consulted. This means, therefore, that the people compiling the lists must anticipate what information will be needed. Departments of the House should be able to identify those questions asked regularly by Members which are answered in the first instance by reference to a list.

40. More complex than teletext is viewdata. This allows a user to search for information provided on the computerised database using a numerical keypad or a full keyboard using keywords. Members can see viewdata systems in the Library and the Transport Office where Prestel is regularly accessed. It is unlikely that it would be practical to provide viewdata services from equipment in public locations as there is a charge for use (unlike teletext where the provider of information incurs most of the cost). However Members with microcomputers or terminals may well be interested in accessing Prestel and other viewdata systems from their offices.[7] If this were provided, Members could pay for the use themselves. We recommend that the Library provide assistance and guidance to Members about Prestel frames and closed user groups relevant to Parliament[8] and that in the first instance space for up to five simultaneous users be allocated for Prestel. The telephone units used at present would fall on the House Vote if the facility is used at Westminster or on the Member using Prestel if it is being used elsewhere.

41. British Telecom has indicated that the House should consider having a closed user group on Prestel (ie only Members, Officers and their staff could use the data) which would also carry electronic mail. As a test phase this has much to recommend it, but the same problems arise as with providing teletext information: someone has to type in the database information.

42. We recommend that teletext be used for new, internal, parliamentary databases as described in paragraph 38, which should be kept as simple as possible and that Prestel and other viewdata services be accessible to provide information created (and marketed) by outside bodies like Lawtel and Citiservice, to name two closed user groups to which the Library subscribes.

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[7] For example see Q181.

[8] Prestel frames containing information of interest to Members include:
Select Committee (public) meetings, inquiries and published reports;
HMSO list of recently published Statutory Instruments;
MAFF, DTI and Department of Employment press notices;
Guide to government acronyms;
Department of Employment economic indicators;
British Rail and other travel information;
Extensive financial data updated hourly including exchange rates;
Selective commercial and other "advertising" information;
Closed user groups which require payment of a subscription;
  LAWTEL (for implementation of sections of acts);
  CITISERVICE (for frequently updated financial data).

43. POLIS (Parliamentary On-line Information Service) is the House's own reference database. It contains much material that is of importance to Members over a broad range of topics from Parlimentary Questions to European draft legislation. Most enquiries using POLIS at present are sent via the Library, but we feel that many Members (or their staff) would prefer direct access to be available on the House network.

44. Some commercial databases are available that might be favoured by Members. They are generally more expensive than Prestel, but some Members may wish to enter into contracts which would allow them to be used. The Library has considerable experience of the use of databases such as BLAISE and *World Reporter* (including the BBC Monitoring Service) and could advise Members on the strengths and limitations of the available databases.

CHAPTER II: Equipment and Systems

45. The Accountant estimated that up to January 1984 as many as 200 Members had used their enhanced office allowance to buy equipment.[9] Even though this figure undoubtedly includes ordinary typewriters and other traditional office equipment, a significant number of Members now have their own microcomputers. It is clear from the evidence that there is a considerable variety in the new microcomputer equipment bought by Members.[10] This is a reflection of the wide difference in needs among Members for information technology which several witnesses emphasised.[11] Notwithstanding this important development it became clear that the difficulties caused by attempting to link different machines on one system would impose a considerable limitation on the uses to which the system could be put. We note that Members of the Canadian House of Commons were strongly encouraged to use one type of recommended machine. Accordingly, we think that on the basis of the research done during the pilot project a recommended type of terminal able to fulfil the requirements of Members should be chosen. The general performance specifications for terminals are already clear from the services recommended to be provided on the system.

46. The Sub-Committee also considered what configuration (ie basic design) of the system to install and what form of cable to use. These two questions are, of course, closely related.

47. The EIU consultants investigated the question of the design of the system and decided that it was unnecessary to instal new cabling in the Palace or other parliamentary buildings. On the basis of Members' present working methods, they concluded that there was no need for substantial communication between Members (or between Members and their secretaries) using electronic methods and that the future scope for such traffic was likely to be limited for some considerable time. They also estimated that the cost of connecting devices to a cable of the sort that might be installed to make up a local area network was still high, while the sophistication of such devices was relatively low.[12] A further

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[9] Q305.

[10] eg Q89, 123, 166, 283.

[11] eg Q246, 260, 261.

[12] Evidence, p34, chapter 7.19 EIU Survey.

point that influenced their decision was that they foresaw severe practical difficulties in installing cables in the Palace without interfering with the historic nature of the building.[13]

48. The consultants instead recommended that the new digital telephone exchange, which is due to be operational from September 1985, should be used to link minicomputers which would be shared by Members and their staff.[14] They were of the opinion that this approach was a relatively cheap method of creating what amounted to a local area network which would provide a capacity that the consultants felt would be adequate for Members.

49. There was criticism of the consultants' proposals from some witnesses. In particular, Members expressed doubts about the practicality of their sharing facilities with each other and other Members' staff.[15] The witnesses from organisations representing secretaries pointed out that the different working patterns followed by Members would make such a system hard to operate.[16] This view was endorsed by the Computer Development Officer[17] and the Deputy Serjeant at Arms.[18] It was further pointed out that there had been rapid advances in microcomputer technology as a result of which microcomputers were tending to replace minicomputers.[19] We think the objections voiced by witnesses to using shared equipment are well founded.

50. The double use of the telephone exchange for voice and data communications as an alternative to installing new cables has the advantage of saving a considerable amount of money. The Sub-Committee therefore gave this option careful consideration. It is clear, however, that the use of the telephone exchange would have serious drawbacks. If Members wish to use the new technology as an integral part of their office arrangements there is a serious possibility that the increased use of the telephone exchange for data transmissions that would result might affect the ability of the exchange to fulfil its principal task of transmitting telephone messages. The use of the private branch exchange could only be an interim solution as the requirement for the increased capacity of special cables becomes pressing. To rely on the present need for capacity of cables would be to miss one of the most important principles that the visit to North America revealed. That is, that future needs have to be catered for. In our view there is no purpose to be derived in delaying the introduction of necessary equipment.

51. The Sub-Committee examined closely the solution of installing a local area network using new cables. It saw at first hand the information technology arrangements in the US Congress and in the House of Commons in Ottawa. It was especially concerned when in North America to bear in mind the consultants' reasons for advising against installing a local area network.

52. In Washington the Sub-Committee learned about the networks of Congress including not only the House and Senate, but also the Library of

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[13] Q22, 23.

[14] Evidence, p36, chapter 7.31 EIU Survey.

[15] Q92, 124.

[16] Q398.

[17] Q50.

[18] Q73.

[19] Evidence, p112 and Q213.

Congress through its Congressional Research Service (CRS), and also the Congressional Budget Office (CBO). All four organisations serving Members and Senators on Capitol Hill rely on specially installed cable systems to provide information.

53. Congress has been fortunate in combining long experience of using computers with a large budget for increasing the range of services. As a result, several systems have been developed separately, building on the previous experience in Congress. This meant that the Sub-Committee learnt a great deal about the possible applications of the new technology from the US Congressional organisations. The experience of the Canadian House, however, was closer to our own. It gave the Sub-Committee an example of a local area network which had been designed and installed in a short space of time with little or no previous computing facilities being in use. Many of the difficulties that the House might expect to arise while installing a completely new system were encountered and dealt with by our Canadian colleagues.

54. The basis of the Canadian system is a local area network which uses broadband cabling and standard Cable TV components. The effect of this is that each Member's office has a junction box which is linked to the local area network and into which his equipment can be plugged. This combination was chosen because it allowed a mixture of data, voice and video services to be provided. It is possible to expand the system without adding extra cabling by using the spare capacity on the cables already in service.

55. The capacity of fibre-optic cable is very much greater than broadband cable and has faster transmission speeds, but when the Canadian system was designed there were technical considerations which favoured the use of broadband cables. The Canadian House has catered for the future need for capacity, however, by installing fibre-optic cables between buildings which will be ready to be used when the technology for their use is available and the need exists. This is, however, partly due to future changes in arrangements for televising Parliament.

56. The Canadian House has assumed that there will be a large demand for capacity in the future. This is based on its own experience as Members and officials have quickly become more used to the new technology. It is supported by the experience in the US where a fuller use of office automation is made. The Canadian House of Commons catered for a change in its own working practices and those of outside institutions over the next decade. We feel that this is the correct approach and that to estimate the needs of Members only on the basis of their present work-load would be unwise. **We cannot stress too forcefully that when considering the provision of a cable system for the House the growing needs of Members for the new technology and the greater complexity of the information with which they must deal in the future must be taken into account.**

57. The Sub-Committee was impressed with the range of services already available on the OASIS system in Canada and on the various US congressional networks. The EIU consultants' doubts about the expense and sophistication of the machinery that could be used with a local area network were answered by the apparent success of the services in Washington and Ottawa.

58. We have already shown how systems such as our own House's Annunciator (and sophisticated variants) could be accommodated as well as videotex-based systems and external computer retrieval systems. The relative simplicity of the OASIS project, with its basis in cabling and having junction boxes in each Member's office using standard terminals, and the broad range of services it can provide make the system particularly impressive. **We are in no doubt that this is easily the most comprehensive route that can be followed, and that it provides the maximum flexibility and choice for Members.**

59. The problem of installing cables in a historic building was mentioned in Washington and Ottawa. Each building provides its own problems but neither in Congress nor in the Ottawa Parliament Building were the cables seen as intrusive by the users or by the Sub-Committee during its visit. (In Ottawa small ducts were used in those buildings where the walls or floors could not provide space for the cables). Although there may be occasional difficulties in some parts of the main building at Westminster, we feel that this is essentially a minor problem of design rather than a serious obstacle.

60. We recommend therefore, that a local area network be installed that can cope with the inevitable growth in demand from Members for information technology resources; this should be based on a new cabling system which will use Cable TV standard components and provide a junction box in each Member's office into which a Member's computing equipment can be plugged.

Choice of equipment

61. The consultants remarked in their Report that at the time of their survey there was little or no advanced office equipment in the Palace and that this would allow a co-ordinated approach based on a single supplier. They recommended that advantage be taken of this to prevent Members from buying a variety of equipment which could interfere with the free choice of a system by the House.[20] They stated that fundamental problems would arise if Members were allowed to choose even from a shortlist of products.[21]

62. We have already noted that this approach was taken by the Canadian House of Commons. We feel that the technical disadvantages of encouraging a piece-meal development of terminals will severely restrict the future growth and use of the system. We believe that it is of crucial importance that Members take advantage of the informed advice available in the House, in particular in the light of experience gained during the pilot project.

Familiarisation with equipment

63. The Sub-Committee found that the familiarisation of Members and staff with available information technology systems was given a high priority in the Canadian House of Commons and in the United States Congress. Considerable effort was made whenever information technology was provided to show potential users the full scope of the systems at their disposal and how to obtain the best service from them. The House will need to consider carefully the methods and resources to be used in helping Members, officials and their staff to use the new House system to the maximum benefit. The familiarisation process will

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[20] Evidence, p31, chapter 7.9 EIU Survey.

[21] Evidence, p36, chapter 7.30 EIU Survey.

necessarily be open-ended and develop hand in hand with any new technology provided by the House.

PART TWO: BUILDING THE SYSTEM

CHAPTER III: Timetable

64. The likely timetable has already been summarised in paragraph 13. A complicated project of the sort we are recommending will not be able to be introduced all at once, but will need to be established step by step. We have to a great extent followed the successful example of the Canadian House of Commons. We recommend that the following phases for setting up the system be adopted.

Phase One (15 months)

65. This phase would be concerned with the more general planning of the system and the recruitment of any extra staff needed. The design of the system in principle will be easy, but because of the idiosyncracies of the various Parliamentary buildings (particularly the Palace itself) the detailed planning will be time-consuming.

66. The Operational Requirement would be issued to industry at this stage. This should not present too much of a problem to design, but it is important that the House should be responsible for its content rather than potential tenderers who would otherwise need long term access to all the Parliamentary buildings. Work on the Operational Requirement should be carried out by the project management team in consultation with a technical working party. The working party would report to the Computer Sub-Committee (see below Chapter IV).

67. During the first phase, a pilot scheme should be started which would provide valuable information about equipment and working patterns of Members. Such a scheme could be set up within 3 months, if it were based as we recommend on existing wiring and a data switch.

Phase Two (18 months)

68. This phase would involve the detailed planning of the system in the first building in which it would be started. (Probably this would be Norman Shaw North and South). The cabling for the broadband network would be installed and tested in this location and the relevant Members would be familiarised in its use by the Project Management Team. The head-end of the system would be installed in the Palace and external cabling would be laid between the two buildings.

Phase Three (18 months)

69. This phase would cover the cabling, testing of the system and familiarisation of Members in the remaining out-buildings. The experience of the previous phase will naturally be useful, although it is likely that the work during this phase will chiefly consist of laying external cables to connect buildings since many of the remaining buildings are small in size.

Phase Four (21 Months)

70. During this final phase the Palace itself will have its cabling planned in detail, installed and tested. The remaining Members who wish to use the systems will be familiarised with it. The physical laying of the cables is likely to take about five months but the planning required will be complex.

71. Some of the work could be done in parallel as could the provision and development of various services that the network would eventually provide. We have assumed that there will be small delays in the various phases. Such delays might increase the time required for the whole project by six to twelve months; nonetheless we estimate the time needed for the system to be introduced to be four years.

CHAPTER IV: Staff Requirements

72. At this stage it is impossible to gauge accurately the change in staff requirements following the introduction of the new system. It is clear that some jobs will change their character while others may be replaced and new ones created. Experience in other institutions has shown that on the whole staff levels are not decreased by introducing information technology. We expect that there will be an increase in the numbers employed by the House in the early stages of the proposed system and thereafter.

73. We have assumed that in the first instance the House will wish the Computer Sub-Committee of the House of Commons (Services) Committee to keep a close watch on the development of the system and be responsible for reporting to the House on the progress made with its introduction into service. We believe this will ensure that Members retain a close overall control of the system as it is introduced. The daily running of the system involving technical decisions, however, could not be carried out by the Computer Sub-Committee without considerable support. We recommend that a working party of officials be set up to report to the Sub-Committee on the progress of the system. This will involve no extra expense to the House but will considerably lighten the burden on members of the Sub-Committee. It would be the responsibility of the working party to issue the Operational Requirement to tenderers, to examine tenders and oversee the continuing installation of the system. This working party might take a similar form to the one that reported to the Computer Sub-Committee on Special Telephone Facilities. The nature of this arrangement must be temporary since the new technology will be a permanent feature of parliamentary life which will grow in importance. At this early stage it is impossible accurately to predict the most suitable method of administering the system but it is by no means inconceivable that a need will emerge for a new, separate department of the House to cater for Members' needs on similar lines to the existing departments of the House.

74. The working party will require technical advice. We recommend that a project management team be employed that would include persons with a knowledge of communications, microcomputers and their software and with experience in project management. The project management team would oversee directly the installation of equipment and cables, and it would monitor

and assess the results of the pilot project and the various phases of introducing the system. It would examine the types of equipment that might be used with the system and any new facilities that might be included. In particular, the team would analyse the cost effectiveness of the various services that the system might provide. The day to day running of the network would also be their responsibility.

75. The need for the project management team is open-ended at present. Although their main function would cease once the network was fully "up and running" there would never be a clear cut time when the system would halt its development. We expect, however, that the team will not be needed by the House for much beyond the four year period required to set up the network.

76. The project management team could be recruited either piecemeal so the team members each became temporary staff of the House or as a team by contract. Management contracts have been used successfuly in the past for the POLIS system and in the House of Commons in Canada. A serious consideration, however, is that in this case such a contract might be difficult to draft concisely, since our management needs may change as the system develops. We feel that any management contract would need to be sufficiently flexible to allow the project management team to work effectively under the direction of the working party. Ultimate control would rest with the House of Commons Commission acting on the advice of the Computer Sub-Committee which could decide how soon to terminate the management contract or dispense with seconded staff after the four year period.

77. Some permanent staff changes will immediately result from the introduction of the new system. A permanent systems administrator, with a staff of deputies, will be required to manage the system and the office automation equipment. They will be needed to deal with general problems, maintenance, software development and training. (If a single supplier is chosen for the equipment then the suppliers might take over some of the training and software development). Experience may show that it will be more cost effective to employ full-time staff to manage "in-house" data bases rather than to use outside suppliers. Such a decision would, of course, increase the number of staff. The likely number of new staff that will be needed cannot be ascertained clearly at present, but we expect the pilot project will allow an accurate estimate to be made.

78. The new system will have a pervasive effect on the work of all staff who at present work with information technology or are likely to do so in the future. The Computer Development Officer will need to be involved in the introduction of the new system at an early stage in order to advise Members and staff; it may be necessary to alter his terms of reference to take account of the important changes that are proposed. It is possible that those officials permanently employed by the House in connection with the information technology will in time form the basis of a new department of the House as mentioned in paragraph 73.

CHAPTER V: Funding

79. The Sub-Committee took evidence from the Accountant in connection with possible sources of funds for the developments recommended in preceding paragraphs.[22] They also received advice on the likely order of costs involved. In succeeding paragraphs we attempt to bring together equipment, cost and source of finance. We should emphasise, however, that the cost levels quoted are minima and cannot (for reasons which will appear) be entirely precise. Much will depend on the way in which the House decides to proceed after the pilot scheme. So far as the source of funds is concerned, we regard our proposals as no more than an initial contribution to a fuller consideration which we envisage as part of Phase 1 (see paragraphs 13 and 64ff).

80. There are a number of ways of providing Members with terminals. One which we considered was to provide Members with the equipment directly, from whatever source the funds were drawn. A particular advantage of this option is that problems of ownership of equipment when the Member leaves the House would be avoided. There are other possibilities. Vote XIII, 2 is used at present for the payment of Members' Secretarial Allowance, including expenditure on office equipment. It might be logical to increase this Vote to fund the purchase by Members of the kind of microcomputer equipment recommended in Chapter I. An initial lump sum might be available in the first and (say) fifth year of a Member's service for the purchase of the equipment itself, with lesser sums payable in the intervening years to cover defined running costs of the equipment. The minimum amount that is considered reasonable to be budgeted for the purchase of a single work-station including a printer and a small amount of software is £4,000 each. Assuming two people per work-station are trained, there would be a further cost of £1,000 per terminal. We are not here including specialist terminals for Members or public areas, which will vary with the system chosen. The total sum required will therefore be £3,250,000 allowing for 650 microcomputers and associated software.

81. The broadband network which will have to be laid, including cabling, components and installation is described in Chapter II. There is no completely satisfactory analogy in present arrangements on which we can rely for an indication of the most appropriate origin of funds. The nearest parallel is the new telephone exchange, most of which will (we understand) be paid for from Vote XIIIA, House of Commons: Administration, which is under the authority of the House of Commons Commission. A certain amount of preparatory building work is the responsibility of PSA. The total capital cost of the network is put at £500,000. This does not cover equipping the new Parliamentary building, though we observe in that connection that our Third Report on The New Building: the Design Brief expressed the hope that arrangements there would be flexible enough to cope with expected future developments in information technology (paragraph 32). It may be that installing the network at the beginning of a development will be much cheaper than similar work in a densely inhabited Victorian neo-gothic edifice. The figure of £500,000 does not include the annual running costs of the system, such as maintenance and rental of external cables, nor any building work required.

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[22] Q304ff.

82. Further equipment will be needed to connect Members' equipment to the House's network. This equipment will be standard and would best be seen as part of the House's responsibility rather than that of individual Members. Assuming that 1,200 ports are required (and excluding maintenance costs) we estimate that such data transmission facilities would cost £650,000. In addition, links between outside systems and the House network will be required. The cost of the equipment for these "gateways" to Packet Switching (PSS) and Prestel (including private circuits) would be £25,000. If the above facilities are regarded as an integral part of the House network then we think it would be suitable to treat them in the same way as other computer equipment provided for the House: they should be included in the CCTA's Vote for Computer Services for the House.

83. At Chapter IV we have sketched out staff requirements, both as regards a project management team and permanent staff increases. We have not been able at this stage to quantify the funds required, but we expect the most likely source would be Vote XIIIA, and the House of Commons Commission.

84. The present annunciator system is 15–20 years old and is perhaps within four years or so of the end of its useful life. We have made proposals in paragraphs 36ff for the integration of a new system into the local area network. We estimate that approximately 600 new colour monitors might be required, and each might need a teletext converter, depending on the design chosen. The capital costs might come to £360,000 including in each case a teletext converter, a set-top channel selector box and a character generator. This does not include annunciators without such facilities in public places or for staff use; nor is maintenance or annual running part of the figure. We can see no immediately convincing parallel which will help us to indicate the most appropriate source of the funds. PSA provide the existing network, but it may be thought the new range of monitors will have changed so much in character that further discussion will be required.

85. It has been proposed in paragraph 67 that a pilot scheme should be mounted, on which longer term decisions might be based. No new wiring would be necessary for the pilot project, and a data PBX would be used. The decision about the precise method of funding the equipment for the pilot project is purely one of financial convenience. We estimate the extra capital cost of switching equipment (for 36 users) at £43,000, plus £5,000 pa maintenance; and 36 work-stations at a total of £180,000. Not included in these figures are the costs of private circuits, access to packet switching or charges made by outside service providers. If capital costs have to be met, we suggest that it might be most appropriate for them to be provided from Vote XIIIA: but, as in other like cases, this will be a matter for early discussion.

86. In assessing the possible cost of the scheme several potential savings should be borne in mind. The most considerable saving would be on the new annunciators. At present additional sets on the current system cost in the region of £1,000 each. Suppliers would no doubt offer generous terms for such a prestige project and the need for future staff for Members, for example as estimated by the Top Salaries Review Board, might be reduced. Further likely savings will be in increased staff efficiency and improvements in office accommodation.

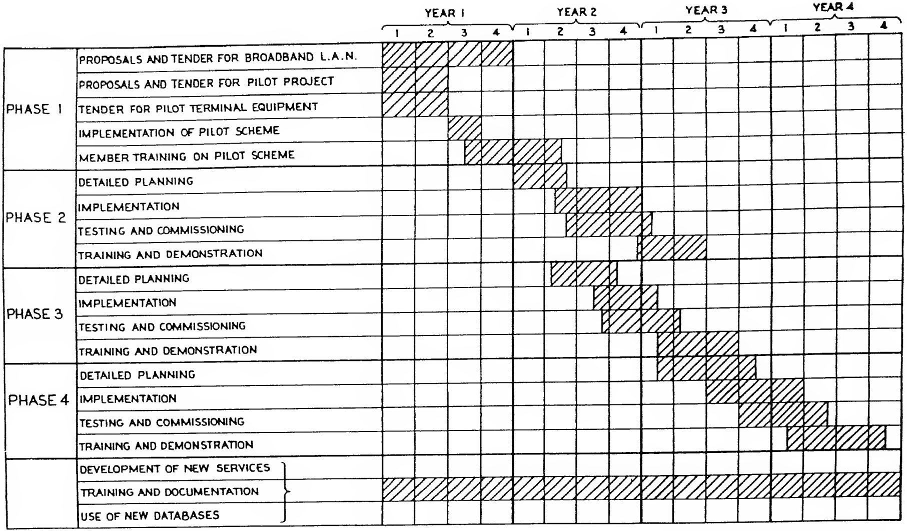
87. It is impossible to estimate, in advance of the pilot, what annual charges will arise. We believe, however, that it would be sensible to reckon overall on a liability of 12 per cent of the capital cost of the network, or £211,000, together with £8,000 as rental for cables and private circuits. The pilot scheme usage costs on an annual basis will be about £43,000.

88. Those costs of the projects which can be estimated at present are summarised as follows (There are various methods of obtaining the service other than purchase, however, eg through rental):

(a) *Pilot Project*		
(i) provision of pilot scheme for 36 Members (Note 1)	£43,000	
(ii) Provision of pilot scheme terminals 36 at £5,000 (Note 1)	£180,000	
		£223,000
(b) *Capital*		
(i) Provision of main network	£500,000	
(ii) Provision of data transmission facilities	£650,000	
(iii) Provision of gateway facilities (including private circuits)	£25,000	
		£1,175,000
(iv) Provision of 600 new TV receivers, set-top channel selectors and two character generators		£360,000
Sub total not including pilot:—		£1,535,000
Total Capital cost of network (including Pilot)		£1,758,000
(c) *Members' equipment*		
Provision of members' terminals for the main project (Possibly every five years—see paragraph 80)		£3,250,000
(d) *Running costs and Recurring Charges*		
(i) Annual maintenance of network at 12 per cent of Capital Cost		£211,000
(ii) Annual rental for cables and private circuits		£8,000
(iii) Annual cost of maintenance for pilot project		£5,000

Notes 1: These items might be provided on a rental basis.
2: The cost of the extra staff to perform the project management role has not been included.
3: VAT is not included.

ANNEX 1



		YEAR 1				YEAR 2				YEAR 3				YEAR 4			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PHASE 1	PROPOSALS AND TENDER FOR BROADBAND L.A.N.	▨	▨	▨	▨												
	PROPOSALS AND TENDER FOR PILOT PROJECT	▨	▨														
	TENDER FOR PILOT TERMINAL EQUIPMENT	▨	▨														
	IMPLEMENTATION OF PILOT SCHEME			▨													
	MEMBER TRAINING ON PILOT SCHEME			▨	▨	▨	▨										
PHASE 2	DETAILED PLANNING					▨	▨										
	IMPLEMENTATION						▨	▨	▨								
	TESTING AND COMMISSIONING						▨	▨	▨	▨							
	TRAINING AND DEMONSTRATION									▨	▨						
PHASE 3	DETAILED PLANNING						▨	▨	▨								
	IMPLEMENTATION							▨	▨	▨							
	TESTING AND COMMISSIONING							▨	▨	▨	▨						
	TRAINING AND DEMONSTRATION									▨	▨	▨					
PHASE 4	DETAILED PLANNING									▨	▨	▨	▨				
	IMPLEMENTATION											▨	▨	▨			
	TESTING AND COMMISSIONING												▨	▨	▨		
	TRAINING AND DEMONSTRATION													▨	▨	▨	▨
	DEVELOPMENT OF NEW SERVICES																
	TRAINING AND DOCUMENTATION	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
	USE OF NEW DATABASES																

PROPOSED IMPLEMENTATION FOR
P.I.T.T.S. PROJECT
PARLIAMENTARY INFORMATION
TECHNOLOGY TELECOMMUNICATION
SYSTEM

ANNEX 2

Proposed Interim Management Structure (See paragraph 73)

House of Commons Commission
|
House of Commons (Services) Committee: Computer Sub-Committee
|
Technical Working Party
|
Staff supervising the system

5 *December* 1984

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